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THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A method of generating hydrogen for use in a fuel cell system, which comprises processing a fuel which is essentially free of organic sulfur-containing compounds to
5 produce a hydrogen-containing stream.
2. A method according to claim 1, wherein the hydrogen-containing stream is used for hydrodesulfurisation of a primary hydrocarbon fuel supplied to the fuel cell system.
- 10 3. A method according to claim 1 or claim 2, wherein the hydrogen-containing stream is used as fuel for the fuel cell system during start-up of the system.
4. A method according to any one of claims 1 to 3, wherein the hydrogen-containing stream is used as fuel for the fuel cell system during shut down of the system.
- 15 5. A method according to any one of the preceding claims, wherein the fuel which is processed contains at most 1ppm by volume sulfur.
6. A method according to claim 5, wherein the fuel which is processed contains at
20 most 0.1ppm by volume sulfur.
7. A method according to claim 6, wherein the fuel which is processed is entirely free of sulfur.
- 25 8. A method according to any one of the preceding claims, wherein the fuel which is processed is selected from bioethanol, biodiesel, rapeseed oil, rapeseed methyl ester, canola oil, canola methyl ester, corn oil, hemp oil, switch grass oil, fatty acid methyl esters, linseed oil, linseed methyl ester, sunflower oil, sunflower oil methyl ester, soy bean oil, palmitic acid, lauric acid, stearic acid, lanoleic acid and mixtures of any two or more of
30 these.
9. A method according to any one of the preceding claims, wherein the fuel is

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processed to produce a hydrogen-containing stream using a steam reformer, autothermal reformer or partial oxidation reactor.

10. A method according to claim 2, wherein the hydrogen-containing stream is mixed
5 with a primary fuel and delivered to a hydrogenation catalyst where organic sulfur-containing compounds in the primary fuel are converted to H_2S and/or non-sulfur-containing hydrocarbons.
11. A method of operating a fuel cell which comprises generating a hydrogen-
10 containing stream by the method as claimed in any one of claims 1 to 10.
12. A fuel cell system comprising a fuel processor which is used to produce a
hydrogen-containing stream from a fuel which is essentially free of organic sulfur-containing compounds.
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13. A system according to claim 12, wherein the hydrogen-containing stream is used
for hydrodesulfurisation of a primary hydrocarbon fuel supplied to the fuel cell system.
14. A system according to claim 12 or 13, wherein the hydrogen-containing stream is
20 used as fuel for the fuel cell system during start-up of the system.
15. A system according to any one of claims 12 to 14, wherein the hydrogen-containing stream is used as fuel for the fuel cell system during shut down of the system.